

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for simultaneous communication over a closed loop bus, the method on a first master agent on the closed loop bus having an input and an output to the closed loop bus, the method on the first master agent comprising:

Coupling at least one slave agent with at least two master agents including a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications, wherein the simultaneous communications on the bus permits two or more of the master agents and the slave agent on the bus to communicate at one time independent of a clock signal;

determining if there is data from at least one of the master agents, and if there is data from the at least one of the master agents then performing:

testing if the data from the closed loop bus is a token, wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus;

in response to the data from the closed loop bus being a token, then moving the data from the at least one of the master agents to the closed loop bus and discarding the token from the closed loop bus; and

in response to the data not being a token from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus;

wherein in response to the data not being from the at least one of the master agents and the data is from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus.

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2. (Previously Presented) The method according to claim 1, the method further comprising:

determining at least one of

if there is data from the closed loop bus, and

if there is data from the at least one of the master agents.

3. (Previously Presented) The method according to claim 1, the method further comprising:

determining at least one of if there is no data on the output and if an advance line is asserted and in response to the at least one of no data on the output and an advance line is asserted then determining at least one of

if there is data from the closed loop bus, and

if there is data from the at least one of the master agents.

4. (Currently Amended) The method according to claim 1, the method further comprising:

determining if the at least one of the master agents is coupled to an access macro and in response to the at least one of the master agents is coupled to an access macro placing tokens on the closed loop bus, where the a maximum number of tokens on the closed loop bus is set equal to a total number of master agents plus the total number of slave agents less one.

5. (Currently Amended) A method for simultaneous communication over a closed loop bus, the method on a slave agent having an input and an output to the closed loop bus comprising:

coupling at least one slave agent with at least two master agents including a first

master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications, wherein the simultaneous communications on the bus permits two or more of the master agents and the slave agent on the bus to communicate at one time independent of a clock signal;

determining if there is data from the closed loop bus or from the at least one slave,

in response to being data from the closed loop bus but not from the at least one slave then moving the data from the closed loop bus to the output, and

in response to being data from the at least one slave but not the closed loop bus then moving the data from the at least one slave to the output;

determining if there is data both from the closed loop bus and the at least one slave and in response to being data from both the bus and the at least one slave then:

if the closed loop bus has priority then moving the data from the closed loop bus to the output and setting the priority to the at least one slave; and

if the closed loop bus does not have priority then moving the data from the at least one slave to the output and setting the priority to the closed loop bus.

6. (Previously Presented) The method according to claim 5, the method further comprising:

determining at least one of

if there is data from the closed loop bus, and

if there is data from the at least one slave.

7. (Previously Presented) The method according to claim 5, the method further comprising:

determining at least one of if there is no data on the output or if an advance line

is asserted and in response to the at least one of no data on the output and an advance line is asserted then determining at least one of

if there is data from the closed loop bus, and

if there is data from the at least one slave

8. (Currently Amended) A method for simultaneous communication over a bus, the method on a master agent having an input and an output to the closed loop bus, the method on the master agent comprising:

coupling at least one slave agent with at least two master agents including a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications, wherein the simultaneous communications on the bus permits two or more of the master agents and the slave agent on the bus to communicate at one time independent of a clock signal;

receiving a reset command;

determining after being reset if at least one of the master agents is coupled to an access macro and in response to the at least one of the master agents is coupled to the access macro then placing $n-1$ tokens on the closed loop bus, where n is the total number of master agents and slave agents communicating on the closed loop bus, and wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus.

9. (Previously Presented) A data communications network for simultaneous communications between two or more agents comprising:

at least one agent designated as a slave agent coupled to a closed loop communications bus in a ring network for simultaneous communications;

at least two agents designated as a first master agent and a second master agent respectively, coupled to the closed loop communications bus;

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an interface to each of the master agents with an input from the closed loop bus and an output to the closed loop bus, the interface comprising a plurality of latches for testing if there is data, and

in response to there being data from at least one of the master agents then testing if the data from the closed loop bus is a token, wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus;

in response to the data from the closed loop bus is a token, then moving the data from the master to the closed loop bus and discarding the token; and

in response to the data is not a token from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus;

in response to the data is not from the at least one of the master agents and the data is from the closed loop bus, then moving the data from the input of the closed loop bus to the output of the closed loop bus.

10. (Previously Presented) The data communications network according to claim 9 further comprising:

an interface on each slave agent with an input to the closed loop bus and an output to the closed loop bus, the interface comprising a plurality of latches for testing if there is data from the closed loop bus or from the slave agent and if there is data from the closed loop bus but not from the slave then moving the data from the closed loop bus to the output and if there is data from the slave but not from the closed loop bus then moving the data from the slave to the output;

wherein the plurality of latches tests if there is data both from the closed loop bus and data from the slave and in response to there is data from both the closed loop bus

and from the slave then testing if the closed loop bus has priority and:

in response to the closed loop bus having priority then moving the data from the closed loop bus to the output and setting the priority to the slave; and

in response to the closed loop bus does not having priority then moving the data from the slave to the output and setting the priority to the closed loop bus.

11. (Original) The data communications network, according to claim 10, wherein the data further includes control, data and parity data.

12. (Currently Amended) The data communications network, according to claim 10, wherein at least one of the communication agents is coupled to a first brand of computer and at least one of the communications agents is coupled to a second brand of computer so as to form a heterogeneous environment.

13. (Previously Presented) The data communications network, according to claim 10, wherein the closed loop bus is selected from a group of buses consisting of wire, wireless and infrared.

14. (Previously Presented) The data communications network, according to claim 9, wherein the slave agent includes:

an interface with an input from the closed loop bus and an output to the closed loop bus, the interface comprising a plurality of latches for testing if the data is for the slave agent and in response to the data being for the slave agent then transferring the data to the slave.

15. (Previously Presented) The data communications network, according to claim 9,

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wherein the interface to each of the master agents further comprises a plurality of latches for testing if the data is for the at least one of the master agents and if the data is for the at least one of the master agents, then passing the data to the at least one of the master agents.

16. (Currently Amended) A computer readable medium containing programming instructions for simultaneous communication over a closed loop bus, the method on a master agent having an input and an output to the closed loop bus, the programming instructions comprising:

coupling at least one slave agent with at least two master agents including a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications, wherein the simultaneous communications on the bus permits two or more of the master agents and the slave agent on the bus to communicate at one time independent of a clock signal;

receiving a reset command;

determining after being reset if at least one of the master agents is coupled to an access macro and in response to the at least one of the master agents is coupled to the access macro then placing $n-1$ tokens on the closed loop bus, where n is the total number of master agents and slave agents communicating on the closed loop bus, and wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus.

17. (Previously Presented) A computer readable medium containing programming instructions for simultaneous communication over a closed loop bus, the method on a master agent having an input and an output to the closed loop bus, the programming instructions comprising:

coupling at least one slave agent with at least two master agents including

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a first master agent and a second master agent on a closed loop bus in a ring network for simultaneous communications;

determining if there is data from at least one of the master agents, and if there is data from the at least one of the master agents then performing:

testing if the data from the closed loop bus is a token, wherein the token is used for complete roundtrip communication transactions so as to avoid deadlock on the closed loop bus;

in response to the data from the closed loop bus being a token, then moving the data from the at least one of the master agents to the closed loop bus and discarding the token from the closed loop bus; and

in response to the data not being a token from the closed loop bus, then moving the data from the input of the closed loop bus to